

Texas Transportation Summit

# Railroad Crossing Quiet Zones

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**WOODHARBOR ASSOCIATES**

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## New Locomotive Horn Rule

- Federal requirement to sound horn
- 15 to 20 seconds, not more than  $\frac{1}{4}$  mile
- Exception – Quiet Zones
- Effective date – December 18, 2004





## Quiet Zone Overview

- Local jurisdictions establish
- FRA safety determination
- Pre-approved (any one):
  - Four-quadrant gates
  - Median dividers
  - Wayside horns

**Maintain crossing safety while reducing train noise**

# Four-quadrant gates



- Block access from all lanes
- Require additional railroad circuitry



## Median Dividers

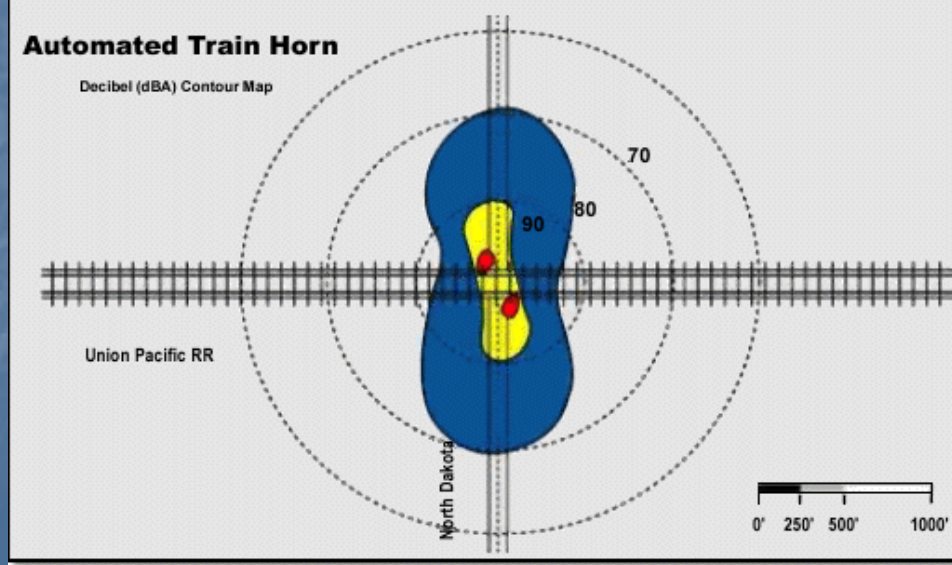
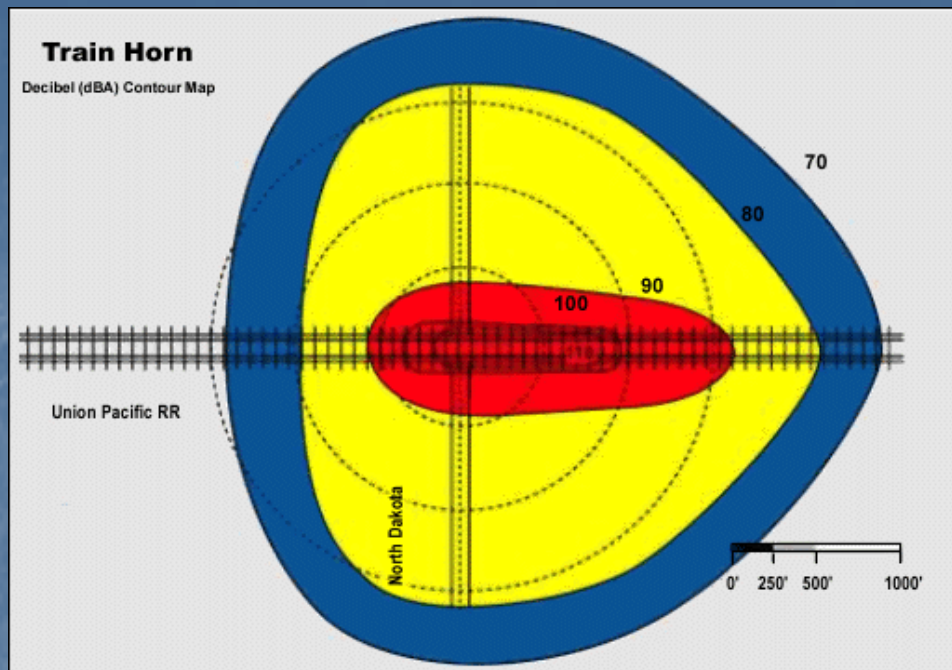
- At least 100 feet in length
- 60 feet if at intersection
- Either:
  - Non-mountable curbs
  - Mountable with channelization devices





## Wayside horn

- Quieter, but not silent
- Reduced area impacted by sound of horn
- Sound directed at roadway
- Requires a pre-emption circuit from railroad



## Wayside horn

- Directs sound toward roadway
- Impacts a smaller area

Sound Level (dBA)	Train Horn Area (acres)	AHS Horn Area (acres)	Percent Reduction
>70	265	37	86%
>80	171	5	97%
>90	31	<1	98%

Diagram and data from Railroad Controls Limited, manufacturer of wayside horns. ([www.railroadcontrols.com](http://www.railroadcontrols.com))

# Estimated Cost per Crossing

(all crossings are required to have flashing lights and gates)

<b>Four-quadrant gates</b>	<b>\$200,000</b>
<b>Wayside horns</b>	<b>\$30,000</b>
<b>Median barriers</b>	<b>\$15,000</b>



# Sugar Land Quiet Zone Plan

Nine crossings – four-quadrant gates at all crossings



UPRR Glidden Subdivision along US 90A, 34 trains/day, up to 60 mph

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# Sugar Land First Phase Quiet Zone

Two crossings adjacent to residential areas



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# FRA Quiet Zone Calculator

Home | Help | Contact | [logoff\\_schief@woodharbor.biz](mailto:logoff_schief@woodharbor.biz)

[Cancel](#)

Change Scenario: US90A\_3957

[Continue](#)

Create New Zone

Manage Existing Zones

Crossing	Street	Traffic	Warning Device	SSM	Risk	
743699S	ELDRIDGE RD.	11600	Gates	4	21,485.62	<a href="#">MODIFY</a>
743700J	WOOD ST.	1420	Gates	4	5,002.39	<a href="#">MODIFY</a>

Log Off

\* Only Public At Grade Crossings are listed.

[Click here](#) for [Supplementary Safety Measures \[SSM\]](#)

## Step by Step Instructions:

**Step 1:** To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the [MODIFY](#) Button

**Step 2:** Select proposed warning device and SSM. Then click the [UPDATE](#) button.

**Step 3:** Repeat Step (2) until the [SELECT](#) button is shown at the bottom right side of this page. Note that the [SELECT](#) button is shown **ONLY** when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

**Step 4:** To save the scenario and continue, click the [SELECT](#) button

## Summary

Proposed Quiet Zone:	US90A
Type:	New Quiet Zone
Scenario:	US90A_3957
Estimated Total Cost:	\$200,000.00
Nationwide Significant Risk Threshold:	16988.00
Risk Index with Horns:	44111.4
Quiet Zone Risk Index:	13244.01

[Select](#)

# To Create a Quiet Zone

- Select the appropriate safety devices for your crossings
- Run the Federal Railroad Administration Quiet Zone Calculator
- Schedule any necessary railroad signal work with the railroad
- Install the safety devices
- Update the federal grade crossing inventory for the crossings
- File notices with federal and local agencies and railroad
- Install “Horn Will Not Sound” signs for motorists

**The new Quiet Zone  
regulations allow  
communities to maintain  
railroad crossing safety  
while reducing train noise.**

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